

## MISCELLANEOUS.

*On the Chilian "Anguilla."* By Dr. R. A. PHILIPPI.

DR. PHILIPPI has succeeded in obtaining a specimen of the fish known under the name of "Anguilla" in Chili: it is a new species of Lamprey, which the author describes under the name of

*Petromyzon acutidens.*

It is much darker than the three other Chilian freshwater Lampreys; above and on the sides blackish grey, with a violet and rusty-brown lustre, the latter especially on the tail. Each branchial orifice stands in the middle of a whitish spot. The ventral surface is grey, yellowish beneath the branchial orifices. The caudal fins are blackish grey; the two dorsal fins rather light grey. Seen from the side, the muzzle appears rather acute, the mouth being almost in a line with the belly; its hinder end projects somewhat, and is separated from the gular region by a transverse fissure, nearly 3 lines broad, which leads into a sort of shallow pouch. This does not form a sac, as in *Petromyzon? Anwandteri* and *Velasia chilensis*, but is somewhat inflated. The total length is 14 inches; the depth at the last branchial orifice is 9 lines, at the first dorsal  $7\frac{1}{2}$  lines, and at the anus 5 lines. The eye is 12 lines from the apex of the muzzle, and 2 lines in diameter; the orifice of the mouth is  $11\frac{1}{2}$  lines long; the first branchial orifice is 19 lines from the tip of the snout, and the last nearly 3 inches. The first dorsal commences 7 inches from the tip of the snout, and is 13-14 lines in length and  $2\frac{1}{2}$  lines in height. The second dorsal is of the same height, but more than 2 inches long; the interval between them is  $1\frac{1}{2}$  inch. The caudal fin is acutely rhomboidal; its dorsal margin is  $1\frac{1}{2}$  inch long; its ventral portion runs, gradually diminishing, nearly to the anus, which is 2 inches 4 lines from the extremity of the tail.

On each side of the head there are three rows of mucus-glands: one runs from the snout towards the lower margin of the eye, but without attaining the latter; the second forms an oblique line close to the antero-inferior margin of the eye; and the third commences below the first, halfway between the apex of the snout and the eye, and is continued to the throat, where it terminates between the hinder margin of the mouth and the first branchial orifice.

The mouth forms an ellipse, or, when fully extended, a broad oval, and has double lips, the outer grey, with a row of small warts, the inner white, short, and entire at the margin. The teeth are remarkably acute. In front of the two inner lingual teeth there stands a transverse row of eight teeth; on the palate there are two groups, each consisting of three acute teeth; and, lastly, there are about four concentric series of acute denticles, gradually diminishing in size from the gullet to the margin of the lips.

In the two groups of three teeth, and the lips destitute of fringes, the species resembles *P.? Anwandteri*, which, however, has a row of large teeth in the external circumference of the mouth, and is further

distinguished by a large gular sac (as in *Velasia*) and by the different form of the caudal fin. The fish inhabits the brooks of some parts of Chili, and is thrown away by the fishermen, who regard it as unwholesome.—*Wiegmann's Archiv*, 1864, p. 107.

*On the Parasitic Nature of the Mistletoe.*

By JOSEPH BOEHM.

The author divides plants in general into the two following groups:—

1. Chlorophyll-bearing, which assimilate the inorganic substances drawn up by the roots from the soil, and thus become the ancestors of all the rest of living nature.

2. Chlorophyll-free, which either extract the assimilated juices from other organisms, or nourish themselves from dead organic matter. The latter plants alone, which live in the manner of animals, are regarded by the author as *parasites*.

The Mistletoe has always been regarded as a plant which extracts the organic juices from the plant on which it grows, and consequently leads a parasitic existence. Boehm calls attention to the following circumstances, which are particularly adverse to this view:—

1. The mode of insertion of the roots of the Mistletoe into the wood of the tree on which it grows.

2. The occurrence of the plant in question upon more than thirty species of trees, all, however, of indefinite growth (*Endumsprosser*).

3. The different results of the analysis of the ashes of the Mistletoe and its supposed nutritive plants.

4. The comparative size of the branches bearing Mistletoe above and below the insertion of the apparent parasite.

Recent investigations, repeated by Boehm, have placed it beyond a doubt that, in trees with indefinite growth, the ascent of the crude nutritive material takes place in the wood, but the assimilated formative juices descend in the bark. Even Knight was aware that when annular strips are removed from the branches of these plants, the latter become thickened only above the annular wound.

This circumstance enabled the author to decide with absolute certainty that the Mistletoe has precisely the same relation to its nutritive plant as a twig to its parent branch, or the graft to the stock. From thirty branches bearing Mistletoe (on *Acer*, *Populus*, and *Quercus*) the terminal twigs above the attachment of the Mistletoe were cut away and the branches ringed below the Mistletoe. Whilst in *Acer* and *Quercus* the branches thus treated usually died soon, the Mistletoe plants on the Poplars not only continued their normal growth, but a thickening of the branch above the annular wound took place. This can only have occurred at the expense of the juices assimilated by the Mistletoe.

The fact that the development of the branches above the insertion of the Mistletoe is hindered has, in the author's opinion, nothing to do with the parasitic nature of that plant. The Mistletoe acts only in the same way as any branch of the tree of which the development is in advance of its neighbours. The injurious effect of the presence